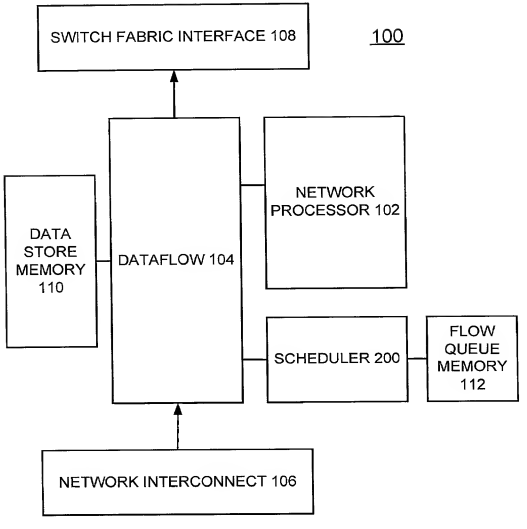
SWITCH FABRIC INTERFACE 108
100
NETWORK PROCESSOR 102
DATA STORE MEMORY 110
DATAFLOW 104
SCHEDULER 200
FLOW QUEUE MEMORY 112
NETWORK INTERCONNECT 106

FIG. 1A

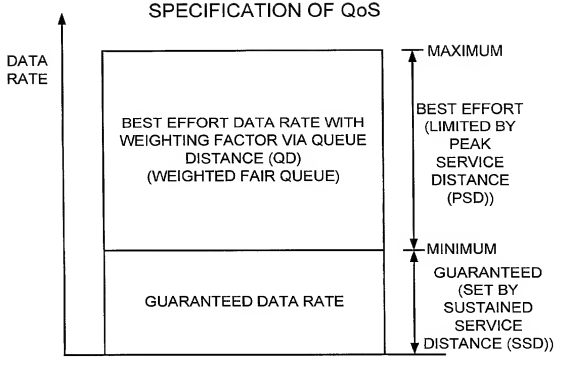
SPECIFICATION OF QoS
DATA RATE
BEST EFFORT DATA RATE WITH WEIGHTING FACTOR VIA QUEUE DISTANCE (QD) (WEIGHTED FAIR QUEUE)
GUARANTEED DATA RATE
MAXIMUM
BEST EFFORT (LIMITED BY PEAK SERVICE DISTANCE (PSD))
MINIMUM
GUARANTEED (SET BY SUSTAINED SERVICE DISTANCE (SSD))

FIG. 1B

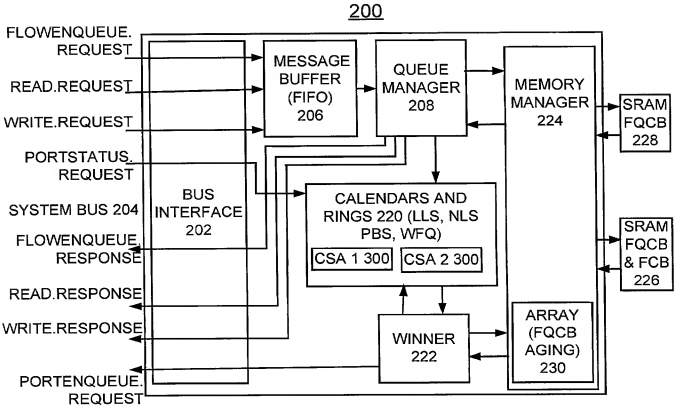
200
FLOWENQUEUE. REQUEST
READ.REQUEST
WRITE.REQUEST
PORTSTATUS. REQUEST
SYSTEM BUS 204
FLOWENQUEUE RESPONSE
READ.RESPONSE
WRITE.RESPONSE
PORTENQUEUE. REQUEST
BUS INTERFACE 202
MESSAGE BUFFER (FIFO) 206
QUEUE MANAGER 208
MEMORY MANAGER 224
SRAM FQCB 228
CALENDARS AND RINGS 220 (LLS, NLS PBS, WFQ)
CSA 1 300
CSA 2 300
SRAM FQCB & FCB 226
WINNER 222
ARRAY (FQCB AGING) 230

FIG. 2

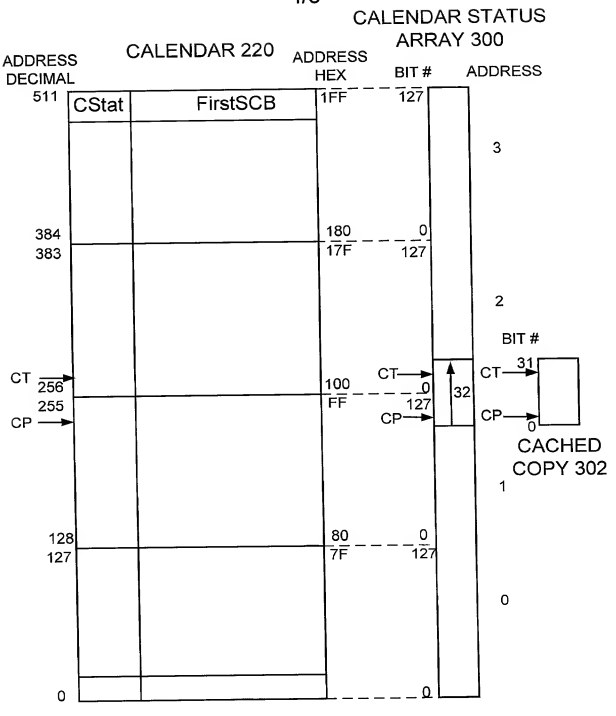
CALENDAR STATUS ARRAY 300
CALENDAR 220
ADDRESS DECIMAL
ADDRESS HEX
BIT #
ADDRESS
CStat
FirstSCB
511
1FF
127
3
384
180
0
383
17F
127
2
BIT #
CT
256
100
0
CT
31
255
FF
127
32
CP
CP
0
CACHED COPY 302
1
128
80
0
127
7F
127
0
0
0

FIG. 3

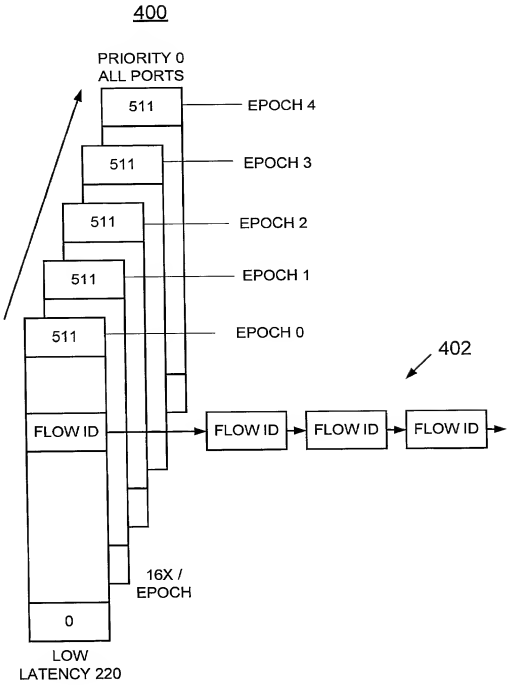
400
PRIORITY 0
ALL PORTS
511
EPOCH 4
511
EPOCH 3
511
EPOCH 2
511
EPOCH 1
511
EPOCH 0
402
FLOW ID
FLOW ID
FLOW ID
FLOW ID
16X /
EPOCH
0
LOW
LATENCY 220

FIG. 4

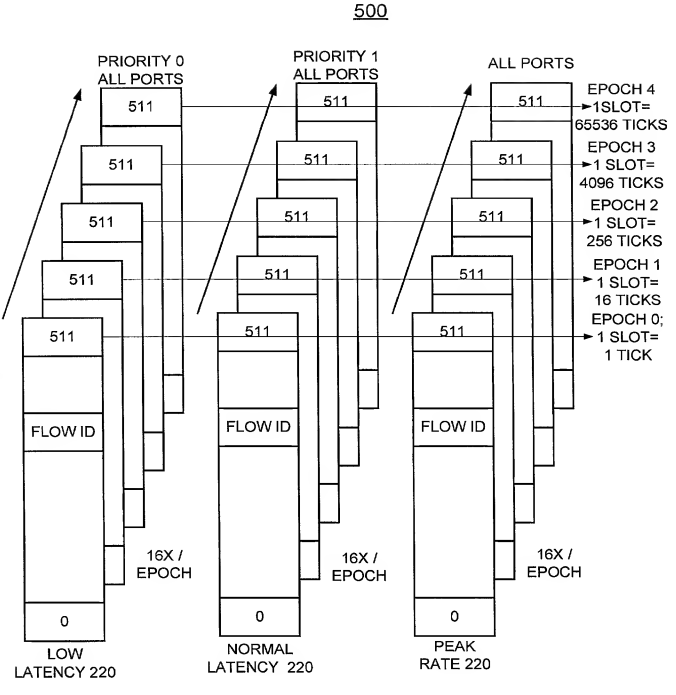
500
PRIORITY 0
ALL PORTS
PRIORITY 1
ALL PORTS
ALL PORTS
511
FLOW ID
0
16X / EPOCH
LOW LATENCY 220
NORMAL LATENCY 220
PEAK RATE 220
EPOCH 4
1SLOT=
65536 TICKS
EPOCH 3
1 SLOT=
4096 TICKS
EPOCH 2
1 SLOT=
256 TICKS
EPOCH 1
1 SLOT=
16 TICKS
EPOCH 0;
1 SLOT=
1 TICK

FIG. 5A

EXEMPLARY CALENDAR STATUS ARRAY 300
ACCESSINPS ALPSORITHM 510

CSA_Calendar_Update <=

LLSEpoch0	when CSA_Access_Counter (1 Downto 0) = 00	Else
NLSEpoch0	when CSA_Access_Counter (1 Downto 0) = 01	Else
PSEpoch0	when CSA_Access_Counter (1 Downto 0) = 10	Else
LLSEpoch1	when CSA_Access_Counter (3 Downto 0) = 0011	Else
NLSEpoch1	when CSA_Access_Counter (3 Downto 0) = 0111	Else
PSEpoch1	when CSA_Access_Counter (3 Downto 0) = 1011	Else
LLSEpoch2	when CSA_Access_Counter (5 Downto 0) = 001111	Else
NLSEpoch2	when CSA_Access_Counter (5 Downto 0) = 011111	Else
PSEpoch2	when CSA_Access_Counter (5 Downto 0) = 101111	Else
LLSEpoch3	when CSA_Access_Counter (7 Downto 0) = 00111111	Else
NLSEpoch3	when CSA-Access_Counter (7 Downto 0) = 01111111	Else
PSEpoch3	when CSA_Access_Counter (7 Downto 0) = 10111111	Else
LLSEpoch4	when CSA_Access_Counter (9 Downto 0) = 0011111111	Else
NLSEpoch4	when CSA_Access_Counter (9 Downto 0) = 0111111111	Else
PSEpoch4	when CSA_Access_Counter (9 Downto 0) = 1011111111	Else
None		

FIPS. 5B
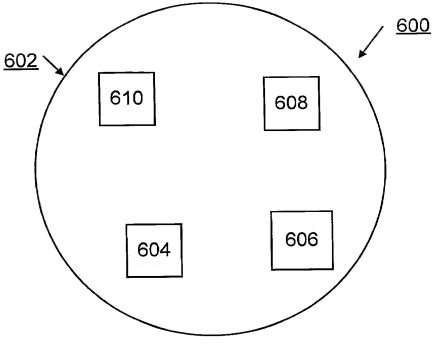
FIG. 6